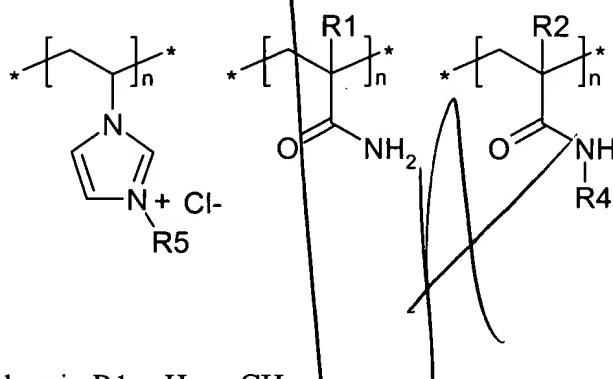


## CLAIMS

What is claimed is:

1. A polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula:

5 (III)



wherein R1 = H, or CH<sub>3</sub>,

R2 = H, or CH<sub>3</sub>,

R4 = a hydrophobic group and

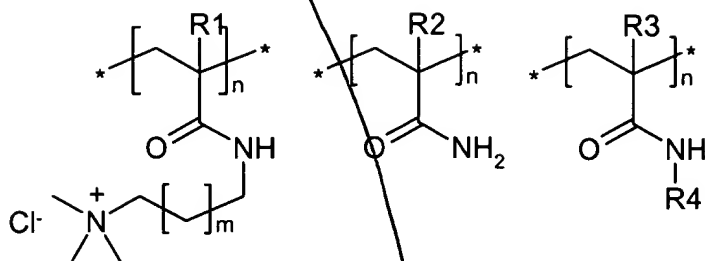
- 10 R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>, in combination with at least one lipase inhibitor.

2. The polymer of claim 1 wherein R1 = H, R2 = H, R4 = C<sub>12</sub>H<sub>25</sub>, and R5 = CH<sub>3</sub>.

3. A therapeutic composition for treating obesity in a mammal comprising a therapeutically effective amount of the polymer of claims 1 or 2, in combination with a therapeutically effective amount of at least one lipase inhibitor.

- 15 4. A method for treating obesity in a mammal, comprising the step of orally administering to the mammal a therapeutically effective amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula

(IV)



wherein R1 = H, or CH<sub>3</sub>,

R2 = H, or CH<sub>3</sub>,

R3 = H, or CH<sub>3</sub>,

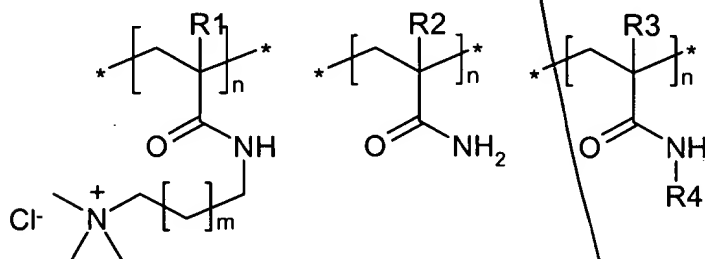
- 5 R4 = a hydrophobic group, and  
m = 0 - 4, in combination with at least one lipase inhibitor.

5. The method of claim 4 wherein said polymer is **Poly**((3-acrylamidopropyl)trimethylammonium chloride-co-acrylamide-co-N-phenylacrylamide)

- 10 6. The method of claim 4 wherein said lipase inhibitor is tetrahydrolipstatin.

7. A method for treating steatorrhea in a mammal comprising the step of orally administering to the mammal a therapeutic amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula

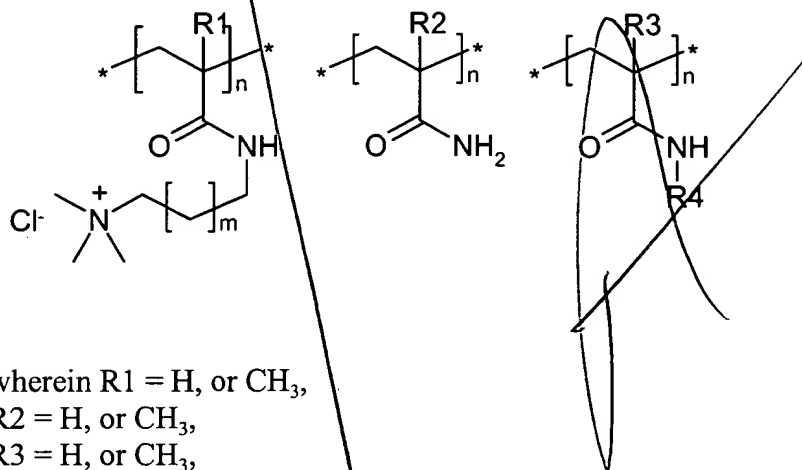
(IV)



- wherein R1 = H, or CH<sub>3</sub>,  
 R2 = H, or CH<sub>3</sub>,  
 R3 = H, or CH<sub>3</sub>,  
 R4 = a hydrophobic group, and  
 5 m = 0 - 4.

8. A method for treating hypertriglyceridemia in a mammal, comprising the step of administering to the mammal an effective amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula

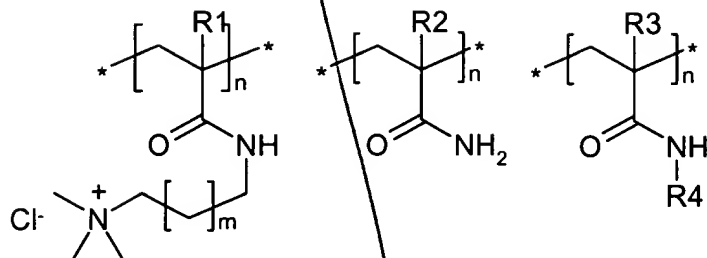
(IV)



- 10 wherein R1 = H, or CH<sub>3</sub>,  
 R2 = H, or CH<sub>3</sub>,  
 R3 = H, or CH<sub>3</sub>,  
 R4 = a hydrophobic group, and  
 m = 0 - 4, in combination with at least one lipase inhibitor.

- 15 9. A method for reducing the absorption of dietary fat in a mammal, comprising the step of orally administering to the mammal a therapeutic amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula

(IV)



wherein R1 = H, or CH<sub>3</sub>,

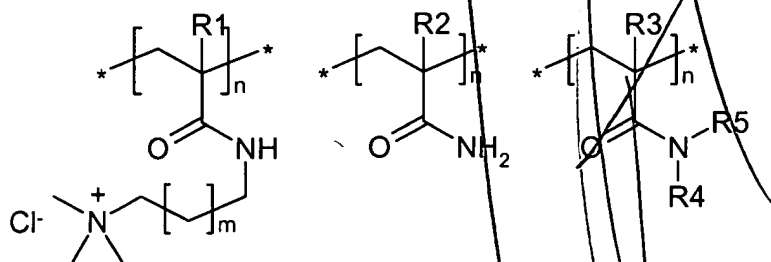
R2 = H, or CH<sub>3</sub>,

R3 = H, or CH<sub>3</sub>,

- 5 R4 = a hydrophobic group, and  
m = 0 - 4, in combination with at least one lipase inhibitor.

10. A polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula:

(V)

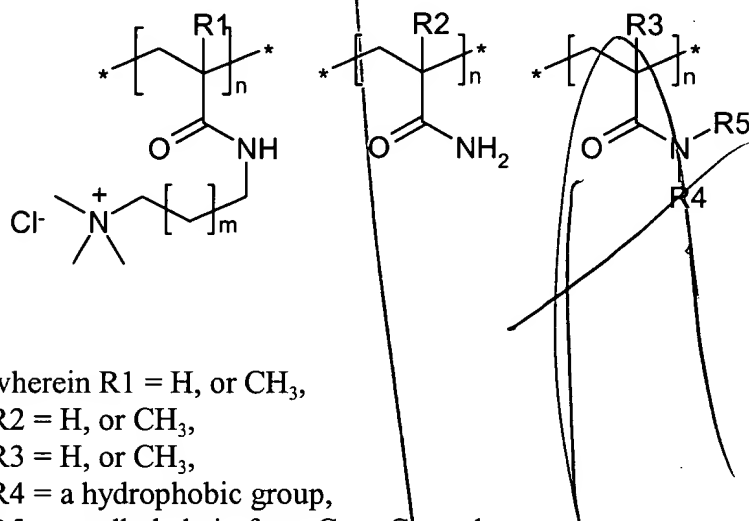


- 10 wherein R1 = H, or CH<sub>3</sub>,  
R2 = H, or CH<sub>3</sub>,  
R3 = H, or CH<sub>3</sub>,  
R4 = a hydrophobic group,  
R5 = an alkyl chain from C<sub>1</sub> to C<sub>22</sub> and  
15 m = 0 - 4

11. The polymer of claim 10 wherein R1 = H, R2 = H, R3 = H, R4 = C<sub>18</sub>H<sub>37</sub>, R5 = CH<sub>3</sub>, and m = 1.

12. A therapeutic composition for treating obesity in a mammal comprising a therapeutically effective amount of the polymer of claims 10 or 11, in combination with a therapeutically effective amount of at least one lipase inhibitor.

13. A method for treating obesity in a mammal, comprising the step of orally administering to the mammal a therapeutically effective amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula: (V)



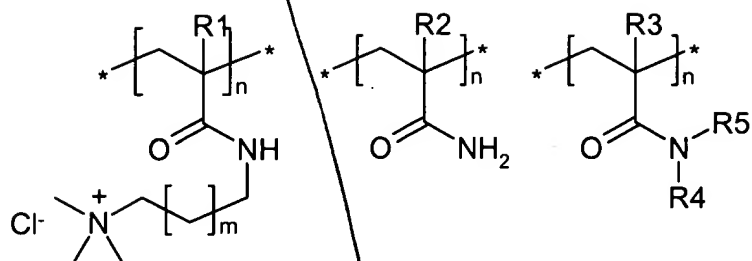
wherein R1 = H, or CH<sub>3</sub>,  
 R2 = H, or CH<sub>3</sub>,  
 R3 = H, or CH<sub>3</sub>,  
 R4 = a hydrophobic group,  
 R5 = an alkyl chain from C<sub>1</sub> to C<sub>22</sub> and  
 m = 0 - 4, in combination with at least one lipase inhibitor.

14. The method of claim 13 wherein said polymer is **Poly**((3-acrylamidopropyl)trimethylammonium chloride-co-acrylamide-co-N-methyl-N-octadecylacrylamide).

15. The method of claim 13 wherein said lipase inhibitor is tetrahydrolipstatin.

16. A method for treating steatorrhea in a mammal comprising the step of orally administering to the mammal a therapeutic amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula:

(V)



wherein R1 = H, or CH<sub>3</sub>,

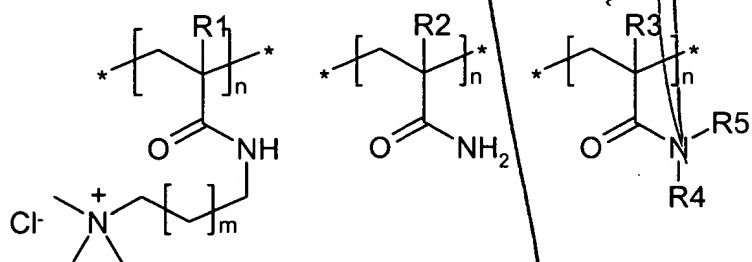
R2 = H, or CH<sub>3</sub>,

R3 = H, or CH<sub>3</sub>,

- 5 R4 = a hydrophobic group,  
R5 = an alkyl chain from C<sub>1</sub> to C<sub>22</sub> and  
m = 0 - 4.

17. A method for treating hypertriglyceridemia in a mammal, comprising the step of administering to the mammal an effective amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula:
- 10

(V)



wherein R1 = H, or CH<sub>3</sub>,

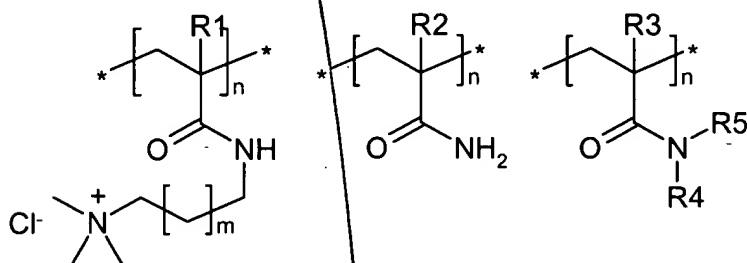
R2 = H, or CH<sub>3</sub>,

R3 = H, or CH<sub>3</sub>,

- 15 R4 = a hydrophobic group,  
R5 = an alkyl chain from C<sub>1</sub> to C<sub>22</sub> and  
m = 0 - 4, in combination with at least one lipase inhibitor.

18. A method for reducing the absorption of dietary fat in a mammal, comprising the step of orally administering to the mammal a therapeutic amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula:

5 (V)



wherein R<sub>1</sub> = H, or CH<sub>3</sub>,

R<sub>2</sub> = H, or CH<sub>3</sub>,

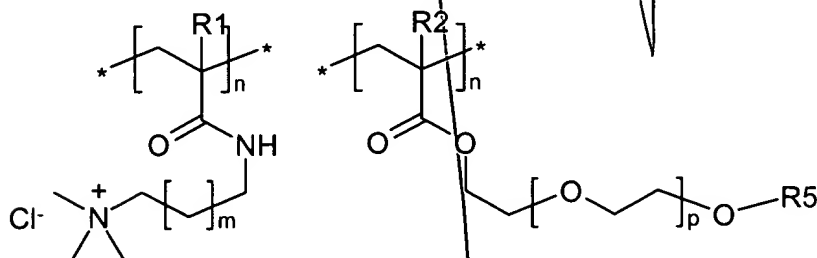
R<sub>3</sub> = H, or CH<sub>3</sub>,

R<sub>4</sub> = a hydrophobic group,

10 R<sub>5</sub> = an alkyl chain from C<sub>1</sub> to C<sub>22</sub> and

m = 0 - 4, in combination with at least one lipase inhibitor.

19. A polymer, salt or copolymer thereof, characterized by a repeat unit having the formula:



(II)

15 wherein R<sub>1</sub> = H, or CH<sub>3</sub>,

R<sub>2</sub> = H, CH<sub>3</sub>,

R<sub>5</sub> = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

$m = 0 - 4$ , and

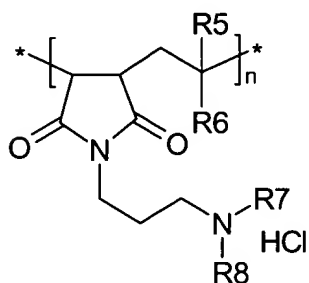
$p = 5 - 125$ , in combination with at least one lipase inhibitor.

20. The polymer of claim 19 wherein  $R1=H$ ,  $R2=H$ ,  $R5=CH_3$ ,  $m=1$  and  $p=$  about 114.

5 21. A therapeutic composition for treating obesity in a mammal comprising a therapeutically effective amount of the polymer of claims 19 or 20, in combination with a therapeutically effective amount of at least one lipase inhibitor.

22. A method for treating obesity in a mammal, comprising the step of orally administering to the mammal a therapeutically effective amount of a polymer, salt or  
10 copolymer thereof, characterized by a repeat unit having the formula:

(IX)



wherein  $R5 = H$ , or an alkyl chain from  $C_1$  to  $C_{22}$ ,

$R6 = H$ , or alkyl chain from  $C_1$  to  $C_{22}$ ,

$R7 = H$ , or alkyl chain from  $C_1$  to  $C_{22}$ ,

15  $R8 = H$ , or alkyl chain from  $C_1$  to  $C_{22}$ , and at least one lipase inhibitor.

23. The method of claim 22 wherein said polymer is **Poly(N-(3-dimethylaminopropyl)maleimide-co-ethylene) hydrochloride**

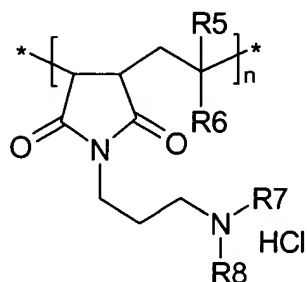
24. The method of claim 22 wherein said lipase inhibitor is tetrahydrolipstatin.

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25. A method for treating steatorrhea in a mammal comprising the step of orally administering to the mammal a therapeutic amount of a polymer, salt or copolymer thereof, characterized by a repeat unit having the formula:

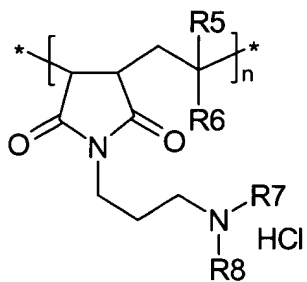
(IX)



- 5 wherein R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,  
 R6 = H, or alkyl chain from C<sub>1</sub> to C<sub>22</sub>,  
 R7 = H, or alkyl chain from C<sub>1</sub> to C<sub>22</sub>, and  
 R8 = H, or alkyl chain from C<sub>1</sub> to C<sub>22</sub>.

26. A method for treating hypertriglyceridemia in a mammal, comprising the step of  
 10 administering to the mammal an effective amount A polymer, salt or copolymer thereof, characterized by a repeat unit having the formula:

(IX)



wherein R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

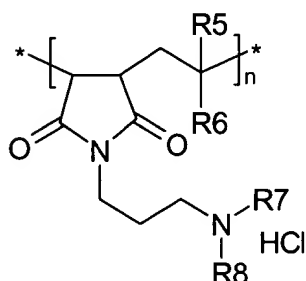
R6 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

R7 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

R8 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>, and at least one lipase inhibitor.

- 5 27. A method for reducing the absorption of dietary fat in a mammal, comprising the step of orally administering to the mammal a therapeutic amount a polymer, salt or copolymer thereof, characterized by a repeat unit having the formula:

(IX)



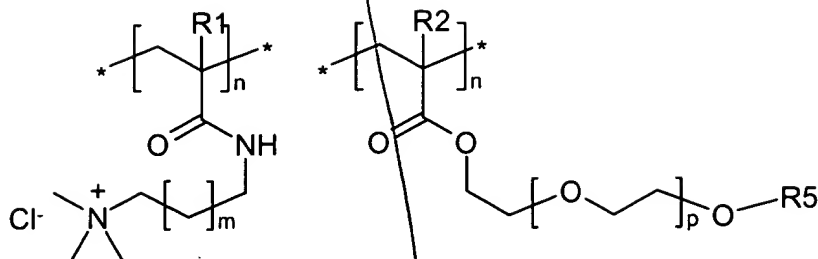
wherein R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

- 10 R6 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

R7 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

R8 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>, and at least one lipase inhibitor.

28. A method for treating obesity in a mammal comprising the step of administering to the mammal a polymer, salt or copolymer thereof, characterized by a combination of  
15 repeat units having the formula:



(II)

wherein R1 = H, or CH<sub>3</sub>,R2 = H, CH<sub>3</sub>,R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

5 m = 0 - 4, and

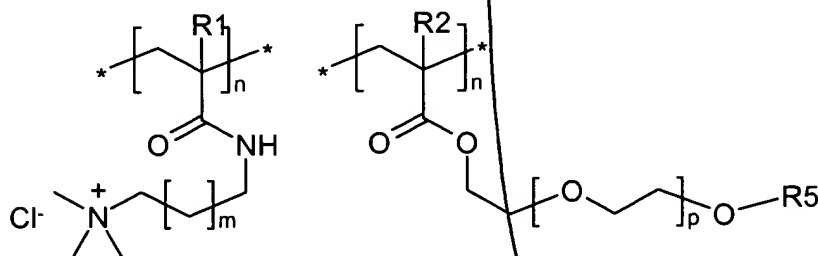
p = 5 - 125, in combination with at least one lipase inhibitor.

29. The method of claim 28 wherein R1=H, R2=H, R5=CH<sub>3</sub>, m=1 and p= about 114.

30. The method of claim 28 wherein said polymer is **Poly**((3-  
10 acrylamidopropyl)trimethylammonium chloride-co-O-acryloyl-O'-  
methylpolyethyleneglycol 5000).

31. The method of claim 28 wherein said lipase inhibitor is tetrahydrolipstatin.

32. A method for treating steatorrhea in a mammal comprising the step of orally  
administering to the mammal a therapeutic amount of a polymer, salt or copolymer  
15 thereof, characterized by a combination of repeat units having the formula:



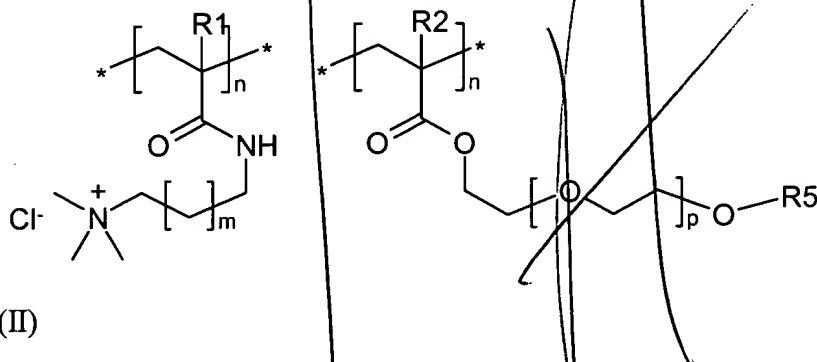
(II)

wherein R1 = H, or CH<sub>3</sub>,R2 = H, or CH<sub>3</sub>,R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

5 m = 0 - 4, and

p = 5 - 125, in combination with at least one lipase inhibitor.

33. A method for treating hypertriglyceridemia in a mammal, comprising the step of administering to the mammal an effective amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula:



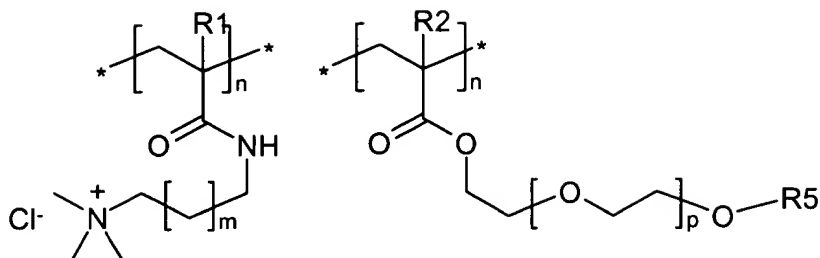
10 (II)

wherein R1 = H, or CH<sub>3</sub>,R2 = H, or CH<sub>3</sub>,R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,

m = 0 - 4, and

15 p = 5 - 125, in combination with at least one lipase inhibitor.

34. A method for reducing the absorption of dietary fat in a mammal, comprising the step of orally administering to the mammal a therapeutic amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula:

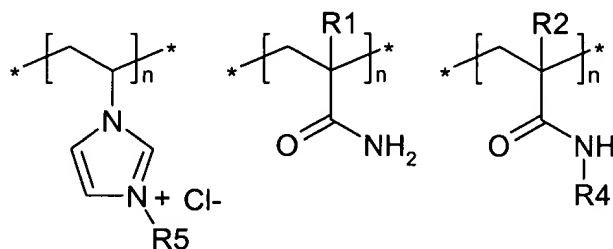


(II)

wherein  $R_1 = H$ , or  $CH_3$ , $R_2 = H$ ,  $CH_3$ ,wherein  $R_5 = H$ , or an alkyl chain from  $C_1$  to  $C_{22}$ ,5  $m = 0 - 4$ , and $p = 5 - 125$ , in combination with at least one lipase inhibitor.

35. A method for treating obesity in a mammal, comprising the step of orally administering to the mammal an effective amount of a polymer, salt or copolymer thereof, characterized by a combination of repeat units having the formula:

10 (III)

wherein  $R_1 = H$ , or  $CH_3$ , $R_2 = H$ , or  $CH_3$ , $R_4$  = a hydrophobic group and, $R_5 = H$ , or alkyl chain from  $C_1$  to  $C_{22}$ , in combination with at least one lipase inhibitor.

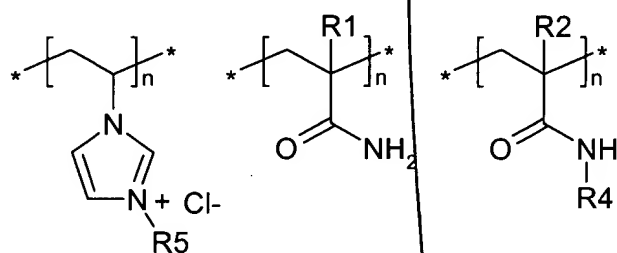
15 36. The method of claim 35 wherein  $R_1 = H$ ,  $R_2 = H$ ,  $R_4 = C_{12}H_{25}$ , and  $R_5 = CH_3$ .

37. The method of claim 35 wherein said polymer is **Poly**(3-methyl-1-vinylimidazolium chloride-co-acrylamide-co-dodecyl acrylamide)

38. The method of claim 35 wherein said lipase inhibitor is tetrahydrolipstatin.

39. A method of treating steatorrhea in a mammal comprising the step of orally  
5 administering to a mammal a therapeutic amount of at least one lipase inhibitor in combination with a polymer characterized by a combination of repeat units having the formula:

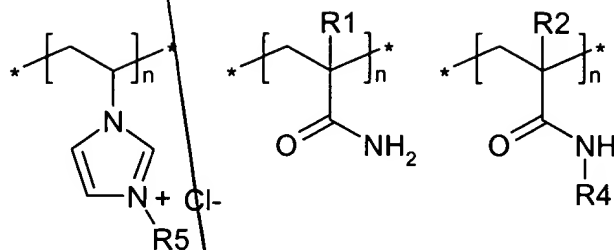
(III)



10 wherein R1 = H, or CH<sub>3</sub>,  
R2 = H, or CH<sub>3</sub>,  
R4 = a hydrophobic group and  
R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>.

40. A method for treating hypertriglyceridemia in a mammal comprising the step of  
administering to the mammal a therapeutically effective amount of at least one lipase  
15 inhibitor and a polymer characterized by a combination of repeat units having the formula:

(III)



wherein R1 = H, or CH<sub>3</sub>,

R2 = H, or CH<sub>3</sub>,

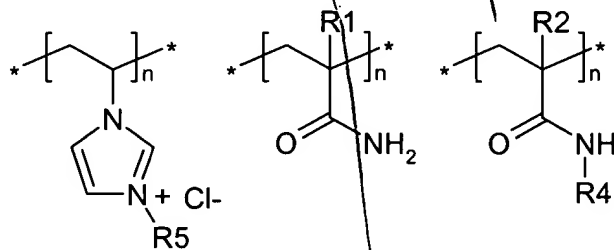
R4 = a hydrophobic group and wherein

- 5 R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>, in combination with at least one lipase inhibitor.

41. A method for reducing the absorption of dietary fat in a mammal comprising the step of orally administering to the mammal a therapeutically effective amount of at least one lipase inhibitor and a polymer characterized by a combination of repeat units

- 10 having the formula:

(III)



wherein R1 = H, or CH<sub>3</sub>,

R2 = H, or CH<sub>3</sub>,

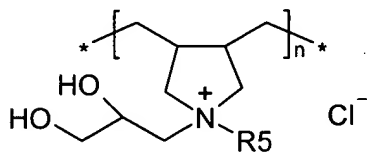
R4 = a hydrophobic group and

- 15 R5 = H, or alkyl chain from C<sub>1</sub> to C<sub>22</sub>, in combination with at least one lipase inhibitor.





10



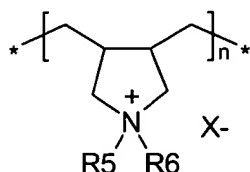
Wherein R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>

48. A method for reducing the absorption of dietary fat in a mammal comprising the step of orally administering to the mammal a therapeutically effective amount of at least one lipase inhibitor in combination with a polymer characterized by a combination of repeat units having the formula

(VII)

49. A method of treating obesity in a mammal comprising the step of orally administering to the mammal an effective amount of a fat binding polymer, salt, or copolymer thereof, characterized by a repeat unit having the formula:

(X)



5 wherein R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,  
wherein R6 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>, X = a pharmaceutically acceptable  
anion, in combination with at least one lipase inhibitor.

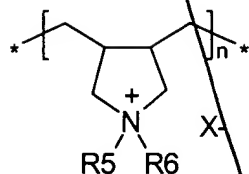
50. The method of claim 49 wherein R5=H, R6=CH<sub>3</sub> and X=tartrate.

51. The method of claim 50 wherein said polymer is Poly(N-methyl-N,N-  
10 diallylammonium) tartrate.

52. The method of claim 49 wherein said lipase inhibitor is tetrahydrolipstatin.

53. A method for treating steatorrhea in a mammal comprising the step of orally administering to the mammal a therapeutic amount of a polymer characterized by a repeat unit having the formula:

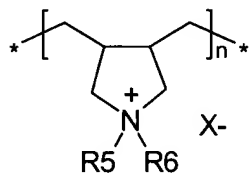
15 (X)



wherein R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,  
 R6 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>, and wherein  
 X = a pharmaceutically acceptable anion

54. A method for treating hypertriglyceridemia in a mammal comprising the step of  
 5 administering to the mammal a therapeutically effective amount of at least one lipase  
 inhibitor and a polymer characterized by a repeat unit having the formula:

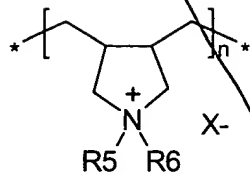
(X)



- wherein R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,  
 R6 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>, and  
 10 X = a pharmaceutically acceptable anion, in combination with at least one lipase  
 inhibitor.

55. A method for reducing the absorption of dietary fat in a mammal comprising the  
 step of orally administering to the mammal a therapeutically effective amount of at least  
 one lipase inhibitor in combination with a polymer characterized by a combination of  
 15 repeat units having the formula:

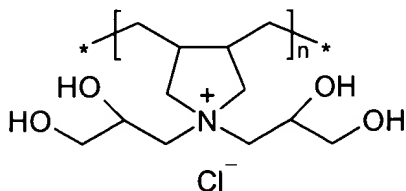
(X)



wherein R5 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>,  
 R6 = H, or an alkyl chain from C<sub>1</sub> to C<sub>22</sub>, and  
 X = a pharmaceutically acceptable anion.

- 5 56. A method of treating obesity in a mammal comprising the step of orally administering to a mammal an effective amount of a polymer, salt, or copolymer thereof, characterized by a repeat unit having the formula:

(VI)



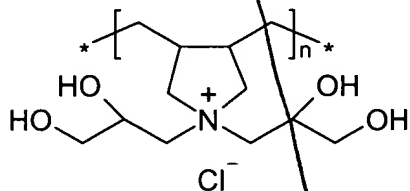
in combination with at least one lipase inhibitor.

- 10 57. The method of claim 56 wherein said lipase inhibitor is tetrahydrolipstatin.

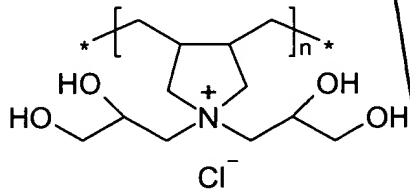
58. A method for treating steatorrhea in a mammal comprising the step of orally administering to the mammal a therapeutic amount of a polymer characterized by having a repeat unit having the formula:



5



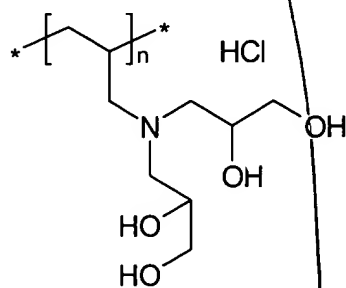
10



61. The method of claim 56 wherein said polymer is as **Poly**(N,N-diallyl-N,N-di(2,3-dihydroxypropyl)ammonium chloride).

62. A method of treating obesity in a mammal comprising the step of orally administering to the mammal an effective amount of a fat binding polymer, salt, or copolymer thereof, characterized by a repeat unit having the formula:

(VIII)

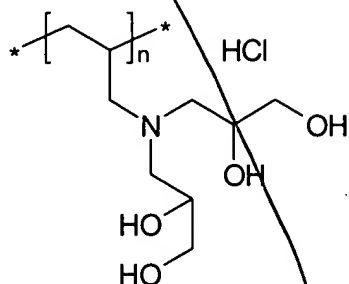


in combination with at least one lipase inhibitor.

63. The method of claim 62 wherein said lipase inhibitor is tetrahydrolipstatin.

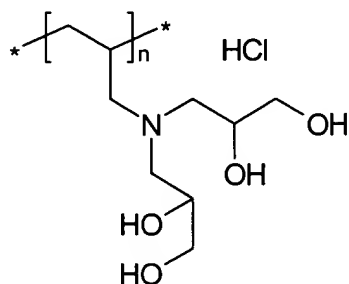
64. A method for treating steatorrhea in a mammal comprising the step of orally administering to the mammal a therapeutic amount of a polymer characterized by a repeat unit having the formula:

(VIII)



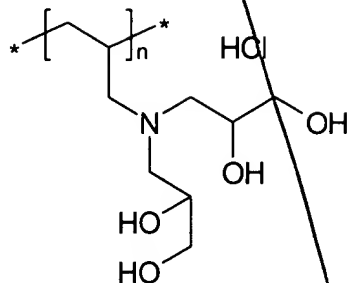
65. A method for treating hypertriglyceridemia in a mammal comprising the step of administering to the mammal a therapeutically effective amount of at least one lipase inhibitor and a polymer characterized by a combination of repeat units having the
- 5 formula

(VIII)



66. A method for reducing the absorption of dietary fat in a mammal comprising the step of orally administering to the mammal a therapeutically effective amount of at least one lipase inhibitor and a polymer characterized by a combination of repeat units
- 10 having the formula

(VIII)



67. The method of claim 62 wherein said polymer is **Poly**(N,N-di(2,3-dihydroxypropyl)allylamine) hydrochloride.

68. A method of treating obesity in a mammal comprising the step of orally  
5 administering to the mammal a therapeutically effective amount of ethoxylated polyethyleneimine in combination with at least one lipase inhibitor.

69. A method of treating steatorrhea in a mammal comprising the step of orally administering to the mammal a therapeutically effective amount of ethoxylated polyethyleneimine.

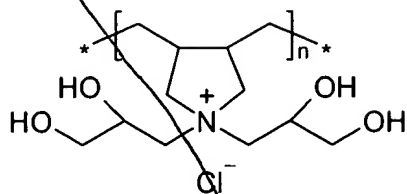
10 70. A method of reducing the absorption of dietary fat in a mammal comprising the step of orally administering to the mammal a therapeutic amount of ethoxylated polyethyleneimine.

71. A polymer, salt or copolymer thereof characterized by a repeat unit having the formula:

SUB  
R3



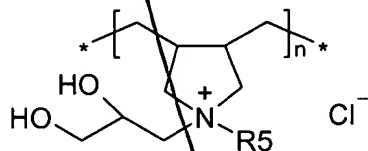
(VI)



72. A therapeutic composition for treating obesity in a mammal comprising the polymer of claim 71.

73. A polymer, salt or copolymer thereof characterized by a repeat unit having the formula:

(VII)



wherein R<sub>5</sub> = H, or is an alkyl chain from C<sub>1</sub> to C<sub>22</sub>.

74. A therapeutic composition comprising the polymer of claim 73.

75. A polymer, salt or copolymer thereof, characterized by a repeat unit having the formula:

\*[CH2]C(CCN(CCO)CO)C(\*)

HCl

76. A polymer, salt or copolymer thereof, characterized by a repeat unit having the formula:

$$\left[ \text{CH}_2 - \text{CH} \left( \text{N}^+ \begin{array}{c} \text{R5} \quad \text{R6} \end{array} \right) \right]_n \text{X}^-$$

5 wherein R5 = H, R6 =CH<sub>3</sub> and X= tartrate.